

**Claims**

1. Position-sensitive detector for measuring charged  
5 particles comprising a surface region, which is  
formed by an amorphous layer with a structured,  
metallic layer disposed above it,

**characterised in that**

10 the structure of the metallic layer is continued  
into the amorphous layer.

2. Position-sensitive detector according to claim 1,  
15 **characterised in that** the structure of the metallic  
layer extends through the amorphous layer into the  
crystalline structure, onto which the amorphous  
layer is applied.

- 20 3. Position-sensitive detector according to claim 1 or  
2, **characterised in that** the amorphous layer is  
formed from germanium or silicon.

4. Position-sensitive detector according to any one of  
25 the preceding claims, **characterised in that** the  
metallic layer consists of aluminium, palladium or  
gold.

5. Position-sensitive detector according to any one of  
30 the preceding claims, **characterised in that** the  
crystalline region beneath the amorphous layer is  
formed of germanium, silicon or a III-V compound.

6. Position-sensitive detector according to any one of the preceding claims, **characterised in that** the structure is formed from segments, which provide a mutual spacing of less than 200  $\mu\text{m}$ , in particular, a spacing of less than 100  $\mu\text{m}$ , by particular preference less than 20  $\mu\text{m}$ .
7. Position-sensitive detector according to any one of the preceding claims, **characterised in that** the amorphous layer is applied to a semiconductor material.
8. Position-sensitive detector according to any one of the preceding claims, **characterised in that** the amorphous layer provides an electrical conductivity, which is substantially less than the conductivity of the material disposed beneath the amorphous layer.
9. Tomograph or Compton camera with a detector according to any one of the preceding claims.